

EXHIBIT 12

Bryson, Santana and Joshua v. Rough Country, LLC

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UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF GEORGIA
GAINESVILLE DIVISION

SANTANA BRYSON and
JOSHUA BRYSON, as Administrators
of the Estate of C.Z.B. and as
surviving parents of C.Z.B, a
deceased minor,
Plaintiffs,

vs. CASE NO.: 2:22-CV-017-RWS
ROUGH COUNTRY, LLC,
Defendant.

VIDEOTAPED

DEPOSITION OF: CHRISTOPHER D. ROCHE
DATE: July 17, 2024
TIME: 9:14 a.m.
LOCATION: Ann Arbor, Michigan
TAKEN BY: Counsel for the Defendant
REPORTED BY: Mary K. Stepp, Court Reporter

1
2 APPEARANCES OF COUNSEL:

3 ATTORNEY FOR PLAINTIFF:

4 (Appearance via Zoom)
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13 GUNN & DIAL, LLC
14 RICHARD H. HILL, ESQUIRE
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17 ALSO PRESENT:

18 Mike Brown, Videographer
19

20 (INDEX AT REAR OF TRANSCRIPT)
21
22
23
24
25

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1 THE VIDEOGRAPHER: We're on the record.
2 The date, July the 17th, 2024. Time on the video
3 monitor, 9:14 a.m., marks the beginning of video 1,
4 deposition of Christopher Roche, in the matter
5 Santana and Joshua Bryson versus Rough Country, LLC.

6 My name is Mike Brown, representing
7 Veritext Legal Solutions. I'm the videographer. Our
8 court reporter is Mary Stepp.

9 Counsel, please state your name for the
10 record and whom you represent.

11 MS. CANNELLA: Tedra Cannella, Devin
12 Mashman for the Plaintiffs, the Bryson family.

13 MR. HILL: Rick Hill for Defendant Rough
14 Country.

15 THE VIDEOGRAPHER: Will the court reporter
16 please swear in the witness.

17 (Witness sworn.)

18 CHRISTOPHER D. ROCHE,
19 having been duly sworn, testified as follows:

20 EXAMINATION

21 BY MR. HILL:

22 Q. Thank you, Mr. Roche. I'm going to share
23 my screen here, at least attempt to.

24 Are you able to see the screen now? It's
25 a -- should have on there the Investigation of the

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1 Bryson Crash, your report dated June 14th, 2024.

2 A. Yes, I can.

3 MR. HILL: All right. And this -- I'd
4 like to mark this as Exhibit 1 to the deposition.
5 It's Bryson 9379 through 9398.

6 (Defendant's Exhibit No. 1 was marked for
7 identification.)

8 BY MR. HILL:

9 Q. Have you brought this with you today to
10 the deposition?

11 A. Yes, I have. I have it in front of me.

12 Q. Okay. Great.

13 MR. HILL: And now I would like to mark as
14 Exhibit 2 a document that we received just minutes
15 prior to the start of your deposition.

16 (Defendant's Exhibit No. 2 was marked for
17 identification.)

18 BY MR. HILL:

19 Q. Let me see if I can share my screen again.
20 Sorry for the technological delay. On the screen now
21 should be a document entitled "Material Received -
22 Amended List." Are you able to see that?

23 A. No, I can't see that at the moment.

24 Q. All right. Are you able to see it now?

25 A. Yes, I can.

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1 Q. Okay. Great. This document is
2 Bates-labeled Bryson 10995. This Amended List, when
3 was this prepared?

4 A. So, I think it was prepared in the last
5 day or so. I am noticing that some of that Amended
6 List is an over -- is a duplication of my first
7 supplemental report, list of availables -- materials
8 available for review. So that for production had
9 already been stated in my prior supplemental report.

10 Q. Okay. Well, let's --

11 MS. CANNELLA: I'll just state for the
12 record what I stated while the witness and counsel
13 were here earlier. We -- our -- my office produced
14 this moments ago because we realized that the Buchner
15 two -- last two Buchner reports and the Buchner rough
16 rebuttal deposition is not on it. So the list is the
17 same in all things, except for the last three items.

18 BY MR. HILL:

19 Q. Okay. So if we look at the bottom of this
20 list, I think what Ms. Cannella is referring to is
21 everything below where it says "Deposition of
22 Jonathan Eisenstat with all exhibits." Is it your
23 testimony, Mr. Roche, that the material below what
24 I've just mentioned are the new materials that you're
25 adding to your list of materials reviewed in

1 connection with your June 14th report?

2 A. So those materials have been made
3 available to me. I have seen the Buchner amended
4 report, the rebuttal report, and his deposition, but
5 that was subsequent to this report being authored.

6 Q. Okay. So the material listed in your June
7 14th report, that is material that you reviewed or
8 was made available to you prior to June 14th that was
9 in addition to the material that was listed in your
10 initial and supplemental reports, is that a fair
11 statement under Section B of your June 14th report?

12 A. Yes, I would agree with that.

13 Q. Okay. And prior to issuing your June 14th
14 report, is there any material that was made available
15 to you for review, other than what's listed in
16 Section B of your June 14th report and what was
17 listed in prior reports of -- you know, predating
18 June 14th?

19 A. No, I don't believe so.

20 Q. Okay. And then now moving to this Bryson
21 10995, which I'd like to mark as Exhibit 2, if I
22 didn't mention that earlier. I believe what you're
23 saying is that the bulk of this is repetitive of
24 material you've already listed, and that the only new
25 material you've reviewed since June 14th are

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1 Bucknel -- Buchner's rebuttal. And it says "depa."
2 I assume that means -- meant to be "depo" file
3 materials, which is listed as Bryson 9409 through
4 9527; the Quest FR26 Report; the Quest FR26 Report
5 Support; the Buchner Amended FR26 Report; the Buchner
6 Rebuttal Report; and the Rough Draft of Bryant
7 Buchner's Rebuttal Deposition. Is that -- have I
8 correctly described that?

9 A. Yes, I think that's a fair description.

10 Q. All right. And when it references the
11 Quest FR26 Report, 10519 Bryson, what -- what is
12 that? Is that the original Quest report or is
13 that -- what is that referring to?

14 A. Yes, I think that's Mr. Buchner's original
15 report.

16 Q. And same when -- with regard to Quest FR26
17 Report's Support? Is that -- that the support that
18 references his original support?

19 A. I believe so, yes.

20 Q. Okay. And did you review those for the
21 first time after June 14th?

22 A. I guess.

23 Q. Okay. And was this document here that's
24 been listed as Exhibit 2, did -- did you draft this?

25 A. I did not. Ms. Cannella's office drafted

1 that.

2 Q. Okay. And was that at your direction
3 or -- or tell me how that came to be.

4 A. Well, those materials were provided to me
5 in the last few days. And obviously my current
6 report that you have dated June 14th doesn't
7 accurately reflect those new materials. So it was
8 agreed that we should make sure that was clear.

9 Q. All right. Do you know exactly when you
10 were provided with these additional materials after
11 June 14th?

12 A. Uhm, I know the deposition transcript or
13 the initial draft of it was provided on Friday, uhm,
14 but the dates of the others I don't remember. It's
15 been in the last few days.

16 Q. All right. And did you produce any
17 correspondence from Ms. Cannella that relates to your
18 receipt of these additional materials?

19 A. I did provide correspondence files that
20 were relevant. I don't recall if I captured this
21 most recent correspondence, though. Because I had
22 that file, assuming we would depose on Friday, and so
23 I captured the correspondence up till Friday. I
24 don't think I've managed to capture any
25 correspondence subsequent to that.

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1 MS. CANNELLA: We can get that to you,
2 Rick.

3 MR. HILL: Sure.

4 MS. CANNELLA: No problem.

5 BY MR. HILL:

6 Q. Is it safe to say that the opinions that
7 you've rendered in your June 14th report, that if we
8 look at the materials listed in -- under paragraph B
9 of that report and we combine it with all of the
10 material you have listed in prior reports, that we
11 have an exhaustive list of the material that you had
12 available to you in issuing your June 14th report?

13 A. Yes, that's correct.

14 Q. Okay. If we then add the material on
15 10995, do we have an exhaustive list of all of the
16 material you've reviewed or been made available to
17 you prior to today?

18 A. Yes, I think that's also true.

19 Q. Okay. Have you ever requested an
20 opportunity to inspect the crash test vehicles?

21 A. I was not aware that those vehicles were
22 available, at the time I was authoring this -- this
23 report.

24 Q. Did you ask if they were available?

25 A. I think Ms. Canne- -- Cannella and I

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1 discussed it. Uhm, but frankly their first step was
2 to go through the materials provided and to see if it
3 was sufficient for me to write this report, and they
4 were, at that time.

5 Q. When did you learn that the materials -- I
6 mean, that the test vehicles were available for
7 inspection?

8 A. Well, frankly, that was only really
9 confirmed when I read Mr. Buchner's deposition
10 transcript.

11 Q. And when you say last Friday, that would
12 be July 15th or -- wait, no, I'm sorry. July 12th?

13 A. Last -- last Friday. July 12th, yes.

14 Q. All right. How many crash tests in your
15 career have you performed or participated in, in
16 connection with your work as a consultant in
17 litigation?

18 A. So you're referring specifically to my
19 time at Robson Forensic?

20 Q. Yeah. As a -- your time at Robson
21 Forensic, you work as a consultant. And I think we
22 talked in your previous depositions about your
23 experience in that capacity in a litigation context.

24 And so my question is, how many crash
25 tests have you been involved in, in connection with

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1 your consulting work in litigation?

2 A. And by -- can you define what you mean by
3 "crash test"?

4 Q. Sure. An actual, real wor- -- real world
5 crash test, where vehicles are crashed in connection
6 with the litigation.

7 A. So, I can think of -- so, sorry to be
8 asking so many questions. But you mean where I
9 initiated, uhm, the request for testing and conducted
10 the testing or was involved in reviewing crash
11 testing that had been conducted by another party?

12 Q. Either one. We know you've reviewed the
13 crash test conducted by another party in this case,
14 so we'll start with that.

15 Have you in any other cases reviewed crash
16 testing conducted by another party?

17 A. Yes, I have.

18 Q. All right. Tell me about that.

19 A. So, that is a case that was -- it's listed
20 on my deposition history. So that was -- I'll have
21 to look at that list. It was the case against Ford.
22 It is the Young versus Procomm Advanced Quality
23 Solutions is -- is the case that's listed on my
24 testimony history. So the one back when I was
25 deposed in October of last year.

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1 Q. Right. All right. Any other cases where
2 you analyzed any type of crash testing done by the
3 other party?

4 A. I'm currently engaged in organizing
5 testing for another case, so I would -- that case
6 is -- testing in that case is still ongoing. So
7 that's another example.

8 In terms of -- for vehicle crash tests,
9 no, I think the -- I think that is the -- the one --
10 one other case I've examined for vehicle crash
11 tests --

12 Q. All right. And -- and -- go ahead.
13 Sorry. Thought you were finished.

14 A. Yeah, with respect to litigation,
15 obviously my prior experience was involved in many,
16 many crash tests.

17 Q. Right. Well, I'm -- I'm asking just in
18 the context of litigation. So I don't want you to
19 disclose any confidential information about the other
20 tests. But you said you're -- you're currently, I
21 guess, consulting as an expert in another case where
22 you said you are organizing testing for that case.
23 Did I hear that correctly?

24 A. Yeah. I'm investigating the possibility
25 of conducting testing related to -- to that

1 particular case.

2 Q. Okay. So testing hasn't actually occurred
3 in that other case?

4 A. That's correct.

5 Q. All right. And is that the only case in
6 the litigation context where you have either
7 organized, directed or participated in any way in --
8 in an actual crash test?

9 A. No. There's been other cases where we
10 were looking at the possibility or actually
11 determining the test setup and procedures. So there
12 have been other instances where I was involved in
13 test setup, test planning.

14 Q. And did those tests actually go forward?

15 A. They -- they did not in that case.

16 Q. Okay. So has there ever been a case where
17 you have participated in, in the ways you've
18 described, a crash test that actually went forward in
19 the litigation context?

20 A. Well, the -- the example I gave you
21 earlier was the case where I was deposed last year,
22 where two crash tests were performed. And I was able
23 to review all the materials related to those crash
24 tests.

25 Q. Yeah. Maybe I asked it the wrong way. I

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1 mean, in situations where your side of the V, the
2 client that you were retained by, where crash testing
3 was done on their behalf, have you ever been involved
4 in a case where crash testing of that type actually
5 went forward?

6 A. Not at this time.

7 Q. Okay. Now that you've had a chance to
8 review the deposition of Mr. Buchner and his amended
9 and rebuttal reports, are you aware whether he has
10 any criticisms of the way the test Escape was
11 ballasted in this case?

12 A. I'm not going to try and summarize
13 Mr. Buchner's opinions. I'm here to discuss my -- my
14 report and my opinions.

15 Q. Well, do you know if he has any criticisms
16 of the weight ratio of the Escape in the crash test?

17 A. I don't know. There's an awful lot of
18 dialogue about the weights. I'm aware of that. He
19 measured the -- the weights. I know he and
20 Mr. Grimes have some disagreement there. But, again,
21 that's -- I highlighted my own concerns with the way
22 the test was run and ballasted, so I would prefer to
23 discuss that.

24 Q. Are you aware that the HVE software that
25 Mr. Buchner used to run his simulations did not allow

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1 him to ballast the Escape, as you suggest should have
2 occurred in the actual crash testing in this case?

3 MS. CANNELLA: Objection.

4 THE WITNESS: I don't --

5 MS. CANNELLA: It's not -- sorry, Chris.
6 Objection, foundation. And I believe -- I'll just do
7 the form objection.

8 BY MR. HILL:

9 Q. You can go ahead and answer, if you can.

10 A. Yeah, I -- I didn't run any HVE simulation
11 as part of my work in this particular case, and I
12 will defer to Mr. Buchner regarding the work he's
13 done.

14 Q. All right. You're familiar with HVE
15 simulation software, correct?

16 A. HVE software is not a software package
17 that I at Robson Forensic currently utilize.

18 Q. Have you ever util- -- utilized it?

19 A. No, I haven't to date used HVE software.

20 Q. All right. You make reference in your
21 report with regard to the ballasting of the Escape of
22 industry standards for ballasting vehicles. Can you
23 state any source that you have for an industry
24 standard for ballasting a vehicle for a crash test in
25 a litigation context?

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1 A. Well, the industry standards I am
2 referring to relate to industry crash tests. For
3 example, I reference FMVSS 301. So there are
4 procedures, there are very well-documented procedures
5 for 301, and that's what I'm referencing against.

6 In this particular crash test that was
7 performed, you know, the stated objective was to
8 match the weights of the subject crash. So I'm
9 commenting on whether that is a fair statement,
10 whether it -- it does represent or not, and that's
11 really what I'm commenting on.

12 Q. Other than the procedures for FMVSS 301,
13 are there any other standards that you claim apply to
14 ballasting of a test vehicle in a -- in a forensic or
15 litigation context?

16 A. Well, there are -- there are many FMVSSs.
17 There are many tests standards. There's IIHS,
18 there's other -- other standards around the world.
19 Those are the standards that are used to certify or
20 evaluate vehicle performance. As -- it's in that
21 instance I'm referring to industry practice.

22 So, for the -- for example, the use of
23 Stoddard solvent. So if you're trying to represent
24 the fuel weight, Stoddard solvent is a good solution
25 for that. So the weight is placed in the correct

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1 location. So that's really what I'm discussing in my
2 report.

3 Q. What is the FMVSS 301 test? What does
4 that relate to? What is that for?

5 A. 301 relates to fuel system integrity.

6 Q. Right. And it's a -- FMVSS is the Federal
7 Motor Vehicle Safety Standards, so it's a compliance
8 test. You'd agree with that, correct?

9 A. I would agree with that, yes.

10 Q. All right. Speaking of the Stoddard
11 solvent. Do you agree that Mr. Crosby and Mr. Grimes
12 used the published curb weight of the Escape as a
13 starting point for their ballasting of the test
14 Escape?

15 A. Uhm, I would -- I would say I've reviewed
16 what they supplied, in terms of the capacity of the
17 weight and the document related to the test weight,
18 and I've compared those two. And I can see some
19 aspects of how they -- I know what they claim the
20 test weight was.

21 No photographs were provided of the
22 vehicle in the test weight condition on a scale, for
23 example. And I can see that there are certain items
24 that were fitted to the test vehicle, where the
25 weight wasn't provided.

1 So really that's -- that's what I've
2 assessed is the comparison of the documents they
3 provided, in terms of the weight and the weight
4 distribution.

5 Q. Yeah, I understand that. But my question
6 was, did they use the published curb weight of the
7 Escape, as their starting point in ballasting the
8 test Escape?

9 A. I -- at this time, I don't recall the
10 foundation of -- of their starting weight. I know --
11 I know what -- they reported the weight they're
12 attempting to get to. I was really more interested
13 in how they achieved that by the distribution of the
14 ballast.

15 Q. Assuming that they did use the published
16 curb weight of the Escape as a starting point, do you
17 agree that the weight of the fuel is already
18 represented in the published curb weight of the
19 vehicle?

20 MS. CANNELLA: Objection to the form of
21 the question. Confusing.

22 BY MR. HILL:

23 Q. Answer, if you can.

24 A. So, you know, Mr. Grimes' assertion was
25 that he was trying to match the weight condition of

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1 the subject vehicle. So what I know from reviewing
2 the test is that the crash test was conducted with an
3 empty fuel system. And we know that the subject
4 vehicle had fuel in its system. And, therefore, the
5 weight is not in the correct location. The fuel
6 weight is going to be applied to the vehicle in a
7 different location than the fuel tank.

8 Q. Do you know how much fuel was in the
9 subject vehicle, at the time of the incident?

10 A. Not off the top of my head.

11 Q. Do you know was -- whether Mr. Buchner
12 accounted for any weight of the fuel in his
13 simulation?

14 MS. CANNELLA: Objection to the form.

15 (Cross-talking.)

16 THE WITNESS: I don't know what to say. I
17 will defer.

18 BY MR. HILL:

19 Q. Okay. Simple question -- and I got
20 criticized for calling it a simple question in the
21 last deposition, so maybe I shouldn't use that term.

22 But do you agree that the published curb
23 weight of a vehicle includes the weight of a
24 fuel -- of a full tank of gas?

25 A. I know that some manufacturers view it

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1 that way, but I can't say that every manufacturer
2 does.

3 Q. Do you know whether that is true for a
4 Ford Escape?

5 A. No, I didn't evaluate Ford's particular
6 published data.

7 Q. So as we sit here today, you're not aware
8 as to whether the published curb weight by Ford for
9 the Ford Escape involved in this crash included
10 weight for fuel?

11 A. No, I do not.

12 Q. Okay. Can you please state any industry
13 standard or federal standard that you know that
14 applies to ballasting a vehicle to act to the
15 condition, when no test dummies are used in a crash?

16 MS. CANNELLA: Can you say that again?
17 I'm sorry.

18 MR. HILL: The court reporter can read it
19 back, yes.

20 (The foregoing question was read back by
21 the court reporter.)

22 MS. CANNELLA: Object to the form of the
23 question. It's confusing.

24 BY MR. HILL:

25 Q. Go ahead.

1 A. So, that's a very broad question. There
2 are a lot of test procedures and standards out there
3 between FMVSS, the NCAP program, IIHS testing. Uhm,
4 I am -- for most dynamic forward-vehicle crash
5 testing, occupants are, as to the test procedure,
6 where -- as they are typically designed to assess
7 occupant injuries. So...

8 Again, I have -- you know, I haven't
9 considered that question. There's a lot of tests out
10 there that may well be an instance, but as I sit here
11 today I cannot give you one.

12 Q. Do you have any support for the
13 application of the procedures used in NCAP or FMVSS
14 compliance testing to forensic testing in the
15 litigation context?

16 A. I think there's a great deal of --
17 MS. CANNELLA: Object, because that calls
18 for a legal -- legal conclusion, legal opinion,
19 foundation.

20 BY MR. HILL:

21 Q. Go ahead and answer, if you can.

22 A. I think there's a great deal of testing
23 conducted in industry to FMVSS and other
24 nonregulatory test modes. And that amount of
25 testing, there are a lot of resources. And so there

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1 is the money available to help develop the right
2 types of procedures, methodologies, instrumentation,
3 so on and so forth, that the reconstruction crash
4 world or crash testing environment can utilize.

5 Q. Just so I make sure I understand this.
6 You've listed the FMVSS testing standards, NCAP, and
7 the IIHS testing as resources or sources for industry
8 standards related to crash testing.

9 My question is, did all of the impact
10 testing that you've cited to in your multiple reports
11 follow each of those three testing standards?

12 MS. CANNELLA: Object to the form of the
13 question. Which impacts testing are you talking
14 about? Defendant's --

15 MR. HILL: All of them.

16 MS. CANNELLA: -- impact testing?

17 MR. HILL: No, he cited to multiple -- and
18 I don't want to go back and pull out every -- each
19 individual one. But my question is, he is -- should
20 be familiar with the testing done in relation to, you
21 know, the NHTSA testing he's referred to,
22 the -- there's testing actually in this June 14th
23 report that he references regarding NHTSA's
24 compat- -- compatibility testing in 2007.

25 Does he know whether the testing of that

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1 sort that he's referred to, whether those tests
2 complied with these industry standards that he's
3 referenced?

4 MS. CANNELLA: Objection, a compound
5 question and unclear.

6 BY MR. HILL:

7 Q. Go ahead.

8 A. So, specific to the compatibility testing,
9 those were research tests that were conducted to try
10 and evaluate the performance of vehicles, where there
11 is a lack of compatibility in terms of vertical
12 alignment. Uhm, so those were attempting to
13 replicate, to some degree, field crashes and -- and
14 field data that was available.

15 Q. Do you know whether that test complied
16 with the FMVSS, NCAP, and/or IIHS procedures?

17 MS. CANNELLA: Object to the form of the
18 question. The specific procedures you're asking
19 about is unclear --

20 MR. HILL: Go ahead.

21 MS. CANNELLA: -- as to the different
22 tests.

23 BY MR. HILL:

24 Q. Go ahead.

25 A. Yeah, the -- the procedures I'm citing,

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1 obviously they're not very specific to certain types
2 of crash tests. So the compatibility tests are
3 designed for a different purpose. There is
4 commonality, in terms of the test setup, but they are
5 not the same tests. So, of course, they differ.

6 Q. So the question is, they differ, you say,
7 because they're not the same tests. And, therefore,
8 they did not comply with the FMVSS, NCAP, or IIHS
9 procedures you referenced, correct?

10 MS. CANNELLA: Object to the form of the
11 question, misstates his testimony. The procedures is
12 unclear what you're talking about. You're
13 compounding multiple things.

14 MR. HILL: Go ahead. We've only got three
15 hours because he's limited the deposition, so I'm
16 trying to --

17 MS. CANNELLA: I -- I understand, but
18 asking --

19 MR. HILL: Go ahead.

20 MS. CANNELLA: -- questions that are
21 designed to get him to give a sound byte on something
22 that isn't clear is not a fair question.

23 MR. HILL: I think it's perfectly clear.

24 MS. CANNELLA: Not clear --

25 MR. HILL: I'm using -- I'm referencing

1 the very procedures that he's cited to, so he
2 should --

3 MS. CANNELLA: Mr. --

4 MR. HILL: -- know what I mean by
5 procedures.

6 MS. CANNELLA: Mr. Hill, there's pages and
7 pages and pages of procedures in those testing
8 reports. So if you have specific questions about
9 procedures, then please ask him about the specific
10 procedure you're talking about.

11 BY MR. HILL:

12 Q. Go ahead and answer the question, if you
13 can.

14 A. So in my report, I obviously understand
15 that the crash test that was conducted was attempting
16 to try and replicate this subject crash. And,
17 therefore, obviously it is not going to conform to
18 any one of the standard industry tests, because this
19 is a very specific crash. It's a real world crash.
20 And this Exponent test was attempting to replicate it
21 in some fashion.

22 My reference here relates to the
23 differences in the specific test setup that are both
24 inconsistent with the subject crash, nor consistent
25 with other procedures I'm aware of that are used

1 within industry for crash testing.

2 Q. Okay. So he was ab- -- able to answer the
3 question.

4 Do you know whether the weight of the
5 equipment that was placed into the test Escape was
6 calculated into the ballasting of the test Escape?

7 A. I'm -- well, based on the documentation
8 that was provided, it was hard to understand the
9 exact weight of the instrumentation and the exact
10 location of the instrumentation. Uhm, but I have --
11 given that there was a target test weight, I am
12 taking it on good faith that that was included, and
13 so the test weight reflects the weight of those
14 individual test pieces of equipment.

15 Q. And if individual pieces of that test
16 equipment was placed in the front axle position of
17 the vehicle, would you agree that it would be
18 improper to ballast the weight of the front
19 passengers, specific to their actual weight, because
20 you then would not be accounting for the weight of
21 the equipment?

22 MS. CANNELLA: Object to the form of the
23 question. Foundation, incomplete hypothetical,
24 misrepresents the evidence that's been presented in
25 the case.

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1 BY MR. HILL:

2 Q. Go ahead.

3 A. So, I didn't see any evidence or
4 ballasting on the front axle, therefore, there's no
5 point related to that because no -- no documentation,
6 photographs or -- or explanation of that was
7 provided.

8 Q. You're aware that there was ballasting in
9 the front two seats, correct?

10 A. Yes.

11 Q. Okay. Do you know whether the ballasting
12 of the test Escape increased the crush or intrusion
13 that occurred in the test?

14 A. What I know is that -- and as I state in
15 my report -- 83 percent of the ballast was located in
16 the second row area, which is behind the center of
17 gravity of the Ford Escape. And that
18 significantly -- is significantly different to the
19 weight of the occupant and cargo in the second row in
20 the subject crash.

21 Q. Do you know whether this difference
22 between the weight in the subject crash and the crash
23 test, resulted in any increased crush or intrusion in
24 the test?

25 A. I'm not saying one way or the other, if

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1 that's the case. I'm simply saying that the
2 ballasted weight doesn't conform to the subject
3 crash, which is not consistent with the stated aim of
4 the crash test.

5 Q. Have you quantified the impact of this
6 difference in ballasting between the subject crash
7 and the test crash?

8 A. No, I've -- I've not attempted to quantify
9 that.

10 Q. Have you done any testing to determine the
11 impact of the ballasting issue, as you've described
12 on the test?

13 A. No, I have not conducted any testing
14 related to that.

15 Q. Have you performed any calculations
16 related to that issue?

17 A. I've not performed calculations either --

18 Q. Have you --

19 A. -- as to that issue.

20 Q. Sorry, I thought you were finished. I
21 apologize.

22 Have you run any simulations to determine
23 the impact of the difference in the weight ballasting
24 between the crash test and subject crash?

25 A. I've not conducted simulations as part of

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1 my work in this case.

2 Q. Do you agree that the axle weight between
3 the test crash and the subject crash were within
4 appropriate limits, in order to perform an
5 appropriate crash test?

6 MS. CANNELLA: Object to the form of the
7 question. It's vague. Appropriate's not defined.

8 BY MR. HILL:

9 Q. Go ahead.

10 A. Uhm, I haven't seen any of the defense
11 experts state what they believe the axle weights were
12 on the subject vehicle at the time of the crash. I
13 can see from their own report that the ax- -- rear
14 axle weight increased relative to the original test
15 that the original vehicle's weight pretest as
16 delivered.

17 And it increased, I think, off the top of
18 my head, somewhere around 3 percent, which is
19 obviously consistent with applying most of the
20 ballast behind the center of gravity.
21 That's -- that's my view on the ballasting.

22 Q. Okay. Any other opinions regarding the
23 ballasting of the test Escape that we haven't
24 discussed?

25 A. Oh, that the ballasting was

1 unrepresentative of the subject crash.

2 Q. Right. Instead of -- that you have on
3 that that we haven't discussed?

4 A. Not at this time.

5 Q. All right. Great. I'll turn next to the
6 issue of overlap or offset. Not sure which term you
7 prefer, so if I misuse them, please let me know.

8 But I believe your report concludes that
9 there was an additional offset by at least four
10 inches in the crash test. And so I'd like to know
11 how did you conclude that the offset in the test was
12 at least four inches different from the subject
13 crash?

14 A. Yes. I'm saying that the offset was at
15 least an additional four inches. I know the test was
16 set up to try and achieve an offset of around 10.8
17 inches. I looked at the damage pattern and compared
18 the damage pattern of both the crash test vehicle and
19 the subject crash vehicle, as well as studying the --
20 the high-speed video and still images that were
21 available.

22 And the four inches is based on the fact
23 that the sheet metal of the liftgate, outboard of the
24 flipper glass, is induced damage in the crash test.
25 And the four inches comes from the width of that

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1 sheet metal. In the -- in the subject crash we can
2 see that there's direct contact damage in that --
3 in -- in that area of the liftgate.

4 Q. And just so I understand that, that you --
5 your report says, "Based upon the deformation pattern
6 of the liftgate and the width of the structure." So
7 I think that's what you were just talking about. The
8 width --

9 A. Yes.

10 Q. -- that the structure you referred to is
11 what? Just so I know --

12 A. It --

13 Q. -- for sure.

14 A. Yes, it -- it is -- maybe a picture would
15 help.

16 Q. I'll stop sharing so you can share your
17 screen. I didn't realize I --

18 A. Well, I'll --

19 Q. -- was still sharing.

20 A. I'm referring you to Image 2 of my report.

21 Q. All right.

22 A. So in Image 2, there are two dashed red
23 overall circular shapes, and that's the area of the
24 liftgate that I'm identifying, as comparing on the
25 left in the crash test, induced damage on the right

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1 subject crash with direct contact damage. And so
2 that measurement of four inches is the width of the
3 sheet metal to the right of the flipper glass.

4 Q. The last part is what I didn't understand.
5 And I put up the -- I think you can see my screen --
6 the photo -- the image you're referring to.

7 A. Yes.

8 Q. And when you say the width, the very last
9 thing you said, are you talking about the width from
10 the -- where I'm pointing to here, the glass to the
11 edge of the vehicle? What exactly are you
12 referencing, when you say the width of that
13 structure?

14 A. Yes. I -- I -- in some of my work
15 product, you'll see there's an actual measurement
16 taken from the exemplar scan data. So I measured the
17 width of the liftgate sheet metal towards the base of
18 this structure, but that's above that lower edge of
19 the lift glass -- the liftgate through the flipper
20 glass.

21 Q. All right. In the subject crash, just so
22 I understand this, the -- there was an offset in the
23 subject crash. Do you know what that offset was?

24 A. I know that Mr. Grimes reported it at
25 around 10.8 inches.

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1 Q. And do you agree with that determination
2 of the offset in the subject crash? Excuse me.

3 A. Uhm, I haven't personally analyzed that,
4 but I -- I -- I understand his methodology and it
5 seems a reasonable approach for his particular crash
6 test setup.

7 Q. And what was his methodology in
8 termining -- in determining the offset of the subject
9 crash?

10 A. He com- -- he compared the point cloud
11 data of both -- of the two vehicles in a -- in a
12 crash position, when he overlaid the two point clouds
13 of the subject Escape and subject F250.

14 Q. And so you haven't done -- I'm sorry. I
15 thought you were finished. I apologize.

16 A. Well, he just compared the lines of both
17 cloud data, but that was just to conclude his
18 methodology.

19 Q. And that's your understanding of his
20 methodology?

21 A. That's right.

22 Q. Okay. And you haven't undertaken to make
23 that type of determination or, you know, used any
24 type of scientific methodology to determine the
25 offset in the subject crash?

1 A. So, I'm not -- my responsibility in this
2 case is not reconstruction. So Mr. Buchner's
3 responsibility is reconstruction. So I'm not trying
4 to duplicate what Mr. Buchner is doing.

5 What -- what I'm trying to highlight here
6 is that clearly, simply from a damage pattern
7 analysis of the two vehicles, the crash test and the
8 subject vehicle, we can see that the damage pattern
9 is inconsistent between the two.

10 Now, obviously there is a vertical height
11 difference, which I have accounted for. And I'm --
12 I'm going off what the stated aim of the test was,
13 which was to match the offset, which Mr. Grimes
14 asserts is 10.8 inches, about 10.8 inches. And
15 whether or not he achieved that, that's what I'm
16 opining on here.

17 Q. All right. Now, I'm a little confused.
18 You've referenced both Mr. Grimes and Mr. Buchner
19 with regard to their analysis of the offset and the
20 subject crash. Which of the two experts' work are
21 you relying upon with regard to that issue?

22 A. Uhm, okay. I understand that may be a
23 little confusing response. So in this case, I have a
24 specific focus as directed by Ms. Cannella that is
25 not crash reconstruction. So I have not attempted,

1 during the course of my work on this case, to do
2 reconstruction. I'm aware that there is a crash
3 reconstructionist for the plaintiff's side.

4 But when I compared these images and the
5 stated objective of the crash test and what
6 Mr. Grimes was attempting to do, it was apparent to
7 me that he didn't achieve the offset he set out to
8 achieve. I'm not trying to reconstruct the subject
9 crash. I'm not trying to reconstruct his crash test.
10 I'm simply observing that the offset didn't achieve
11 the pretest objective.

12 Q. Okay. And other than looking at the
13 photographs in Image 2 or any other photographs you
14 might have referenced, is there any other evidence or
15 information that you relied upon in concluding that
16 the offset was at least four inches different from
17 the subject crash?

18 A. Well, it's a combination of looking at the
19 photographs and some of the films available. So
20 there is -- there is high-speed film available of the
21 crash test, and you can look at the alignment of the
22 hood to the Escape during that high-speed film. So
23 that's what I've used for the basis of that opinion.

24 Q. So the -- I'm assuming you're referring to
25 the overhead view, high-speed film of the crash test?

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1 A. Correct.

2 Q. And how did you use that to form your
3 opinion that the offset was at least four inches
4 different from the subject crash?

5 A. No, that wasn't what I used to determine
6 the four inches. I've just described the method I
7 used to determine the four inches. But you can kind
8 of get a sense from reviewing the film of the loading
9 of that part of the -- of the liftgate.

10 Q. In the subject crash, did any portion of
11 the F-250 impact the right side of the subject Escape
12 to the right of the window of the hatch? I'm trying
13 to understand that opinion. So, I'm referencing your
14 Image 2 and the area that you've circled with the
15 dotted circle.

16 Are you saying that that portion of the
17 subject Escape was impacted directly by the subject
18 F-250?

19 A. I'm saying that that area in the circle is
20 consistent with direct contact damage.

21 Q. Okay. So you believe that the area in the
22 circle on the subject Escape and Image 2 is evidence
23 of direct impact from the F-250? Just trying to make
24 sure that's clear.

25 A. Yes.

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1 Q. Okay. And the circled area for the test
2 crash Escape, your opinion is that in that area there
3 was no direct impact by the test F-250?

4 A. That's right. I'm saying that's induced
5 damage.

6 Q. Okay. And other than looking at these
7 photographs, can you tell -- tell me, you know, the
8 basis for that opinion?

9 A. Just described the basis for that opinion.
10 I just walked you through that process.

11 Q. Right. I'm just saying, so it's the
12 visual representation of the damage to the vehicles
13 that you're relying upon for that conclusion?

14 A. It's the damage pattern analysis, combined
15 with measuring an exemplar Ford Escape, yes.

16 Q. And just to be clear, what did you measure
17 on the exemplar Ford Escape?

18 A. I measured --

19 MS. CANNELLA: Objection, asked and
20 answered.

21 BY MR. HILL:

22 Q. Go ahead.

23 A. I measured the width of the sheet metal to
24 the right of the flipper glass.

25 Q. And that's from the edge of the flipper

1 glass to the edge of the vehicle; is that correct?

2 A. It's to the rear-facing surface of the
3 liftgate.

4 Q. Okay. Do you know if the difference in
5 the offset or overlap, whichever term you prefer,
6 that occurred in the crash test had any impact on the
7 level of crush or intrusion seen in the crash test?

8 A. So in my experience, uhm, you have what
9 we've discussed at great length, physical alignment.
10 You also have lateral alignment between structures.
11 So in the instance where there is less lateral
12 alignment, so less overlap or more offset, the forces
13 are concentrated on a smaller part of the -- the
14 struct- -- the structure.

15 Q. With the forces being applied to a smaller
16 part of the structure, have you determined how much
17 those greater forces increased intrusion or crush in
18 the crash test?

19 A. No. My opinion is that, again, if the
20 objective of the crash test was to replicate the
21 subject crash, this is another instance where it
22 hasn't been replicated.

23 Q. Have you done any work to determine
24 whether this example of where the test crash did not
25 replicate the subject crash had any impact to -- on

1 the crash test?

2 MS. CANNELLA: Object to the form of the
3 question. Vague.

4 BY MR. HILL:

5 Q. Go ahead.

6 A. In terms of -- do you mean in terms of
7 quantifying intrusion levels?

8 Q. That's right. Correct.

9 A. No, I haven't tried to quantify difference
10 in intrusion levels, other than looking at the
11 survival space in the second --

12 THE REPORTER: The what space? I'm sorry.

13 THE WITNESS: Survival space.

14 THE REPORTER: Thank you.

15 MS. CANNELLA: In the second row.

16 THE WITNESS: Right.

17 MS. CANNELLA: I just want to finish it
18 for her.

19 THE WITNESS: In the second row.

20 MS. CANNELLA: Yes.

21 BY MR. HILL:

22 Q. Analyzing the survival space in the second
23 row between the subject crash and the crash test
24 gives you an analysis comparing the crash test to the
25 subject test.

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1 But my question is, have you done anything
2 to quantify how the crash test would have been
3 different, if the offset or overlap matched the
4 subject crash?

5 A. The purpose of my analysis was to really
6 understand how representative the crash test is to
7 the subject crash. That's -- that's, uh -- that was
8 what I -- my objective and that's why I've written
9 this report and formed the opinions I've had -- I --
10 I have.

11 Q. All right. Well, have you done any
12 testing to determine the impact of the difference in
13 offset on the results of the crash test?

14 MS. CANNELLA: Asked and answered.

15 BY MR. HILL:

16 Q. Go ahead.

17 A. No, I haven't. I've simply identified the
18 discrepancy between the crash test that was performed
19 and the subject crash.

20 MR. HILL: We've been going about an hour,
21 let's take a quick break. I need --

22 MS. CANNELLA: Okay.

23 MR. HILL: -- to use the restroom. I'll
24 be back fast.

25 THE VIDEOGRAPHER: Off the record 10:06.

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1 (Recess was taken from 10:06 a.m. to
2 10:13 a.m.)

3 THE VIDEOGRAPHER: Back on the record.
4 The time 10:13.

5 BY MR. HILL:

6 Q. Let's say that the crash test -- well, let
7 me back up. Scratch that.

8 When you testified that there was at least
9 a four-inch difference in the offset, are you
10 referencing the 10.8 offset calculated by Mr. Grimes
11 or the 12-inch offset originally tested to --
12 testified to by --

13 MS. CANNELLA: Hey, guys --

14 MR. HILL: -- by Mr. Buchner.

15 MS. CANNELLA: -- sorry. I wasn't in the
16 room. Can you -- can y'all check for me before you
17 get started next time?

18 MR. HILL: Oh, yeah. I thought you said
19 you were ready. I -- I apologize.

20 MS. CANNELLA: No.

21 MR. HILL: Somebody said they were --

22 MS. CANNELLA: I'm here.

23 MR. HILL: -- ready. I thought it was
24 you.

25 MS. CANNELLA: No.

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1 MR. HILL: Yeah, I was trying to sneak in
2 a question there before you got back. Sorry.

3 MS. CANNELLA: That's okay.

4 MR. HILL: Are you -- are you ready now?
5 Sorry about that.

6 MS. CANNELLA: I'm ready, don't worry.
7 Yeah, I'll turn on my camera so you can see me.

8 MR. HILL: All right. Sure. Sorry. I'll
9 reask the question.

10 MS. CANNELLA: Thanks.

11 BY MR. HILL:

12 Q. Uhm, the four-inch offset that you
13 testified about, Mr. Roche, is that relative to the
14 10.8 offset determined by -- by Mr. Grimes or the
15 12-inch offset that Mr. Buchner testified to,
16 originally --

17 MS. CANNELLA: Object to --

18 MR. HILL: -- just so we're --

19 MS. CANNELLA: -- the form of the
20 question.

21 MR. HILL: -- just so we're clear.

22 MS. CANNELLA: Object to the form of the
23 question. Misstates Mr. Buchner's opinion.

24 BY MR. HILL:

25 Q. Go ahead.

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1 A. Yeah, my -- my reference here is related
2 to Mr. Grimes' 10.8 inches.

3 Q. Okay. And so your testimony, just to be
4 clear, is that the offset is at least four inches
5 from 10.8?

6 A. Yeah. My testimony is that in the crash
7 test we can see induced damage in the liftgate in the
8 area that we discussed. There's -- there's contact
9 damage in the subject crash and that width is four
10 inches.

11 Q. Okay. Great. Have you done any work at
12 all to determine how the crash test would have been
13 different, if the offset in the crash test would have
14 been exactly 10.8?

15 A. So my report really, as I mentioned
16 earlier, is trying to identify how representative the
17 crash test is to the subject crash and -- and what,
18 if any, conclusions can be drawn from it. And what I
19 highlight throughout the report -- and I know you're
20 working through it, we're not there yet -- is there
21 are multiple instances where the crash test isn't
22 representative and there are multiple variables that
23 have been changed between the subject crash and the
24 crash test. So, therefore, isolating the
25 contribution of any one variable becomes impossible.

1 So how Mr. Grimes reaches his conclusion
2 based on the crash test is -- is really what I'm
3 forming an opinion about, which is later in my
4 report.

5 Q. I'll ask it again. Have you done any work
6 to determine whether a crash test that hit the exact
7 10.8 offset, how the results would differ from the
8 actual crash test?

9 MS. CANNELLA: Object to the form of the
10 question. Number one, no one has testified that --
11 or the witness has not testified that the offset was
12 exactly 10.8. He explained what the four inches
13 meant. Two, asked and answered.

14 BY MR. HILL:

15 Q. Go ahead.

16 A. So, again, my objective was to understand
17 the relevancy and the representativeness of this
18 crash test to the subject crash and what we can draw
19 from it, if anything, based on how it's conducted.
20 And so my goal was to identify or -- I have just
21 reported areas of discrepancy.

22 In terms of understanding the contribution
23 of each of the discrepancies, I would think that the
24 onus would fall on the people who ran the crash test,
25 not -- not myself.

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1 Q. So you have not reached any conclusions or
2 done any work to formulate those conclusions based
3 upon the discrepancies in the crash test?

4 MS. CANNELLA: Object to the form of the
5 question. It's confusing. And to the extent you're
6 asking if he was able to isolate the effect of the
7 misrepresentativeness of the Exponent crash test, he
8 has already stated his answer to that question.

9 THE WITNESS: What I'm saying is, there's
10 too many variables changed between the subject and
11 the crash test, so you can't draw meaningful
12 conclusions because it's unrepresentative.

13 BY MR. HILL:

14 Q. You cannot contra- -- draw meaningful
15 conclusions about what?

16 A. So, Mr. Grimes draws meaningful
17 conclusions from his crash test, right? So, for
18 example -- and I quote from page 11 of my report --
19 "The difference in the seat deformation in both
20 Escapes is probably due to the lack of cargo in the
21 rear cargo area of the test Escape."

22 I -- what I'm saying in my report is, you
23 can't make that determination because he's not
24 accounting for the other discrepancies, the other
25 differences that he's introduced in the crash test

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1 relative to the subject crash.

2 Q. All right. Well, we haven't even broached
3 that subject yet, and so I'm not talking about that
4 subject. I'm talking about your work and your
5 conclusions. And you just said you couldn't draw
6 conclusions, based upon the discrepancies. And I
7 asked you conclusions about what. And what -- what
8 do you mean, other than your conclusion that
9 Mr. Grimes' cargo hypothesis is not, you know, backed
10 by a scientific methodology? I understand that
11 conclusion.

12 What other conclusions were you
13 referencing that you can't make, based upon the crash
14 test?

15 MS. CANNELLA: Object to the form of the
16 question. It's, uhm -- sounds to me like you're
17 suggesting that you're saying he can't conclude
18 something, when the testimony is that no one can
19 conclude something. And so --

20 MR. HILL: Well, these speaking objections
21 are getting outrageous, Tedra. Just object to the
22 form of the question. And if he can't answer it, he
23 can't answer.

24 MS. CANNELLA: Mr. Hill --

25 MR. HILL: You're only allowed to object

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1 to the form of the question. You're not allowed to
2 go into a long diatribe speaking -- instructing the
3 witness about the problems with the question in your
4 mind.

5 MS. CANNELLA: Mr. Hill, I am allowed to
6 try to make an objection that allows you to correct
7 it. And to the extent you're trying to
8 mischaracterize what he said, I absolutely am allowed
9 to address that. You said --

10 MR. HILL: Go ahead --

11 MS. CANNELLA: -- that he can't draw
12 conclusions and his report and his testimony is that
13 no one can draw conclusions. That's -- that's
14 misleading.

15 MR. HILL: That -- that includes him. And
16 that's what he was talking about. I was asking him
17 about his conclusions. And I was clarifying his
18 answer to the last question, where he said that you
19 can't draw conclusions. And I was asking what
20 conclusions is he not able to draw from it. That was
21 the basis of the question.

22 BY MR. HILL:

23 Q. So answer, please, if you can.

24 A. So the state- -- so it wasn't my crash
25 test, but according to Mr. Grimes the purpose of the

1 test was to explore what type of intrusion would
2 occur without the lift kit on the vehicle.

3 So the point I'm making is that with all
4 these differences, all these variables that have
5 changed between his crash test and the subject crash,
6 you're not going to be able to isolate how that one
7 variable, the lift kit, the right height can make.

8 Q. Well, one of the variables between the
9 crash test and the subject crash was the color of the
10 vehicles. That's a variable that existed between the
11 subject crash and the test crash. But we can
12 conclude that the color the vehicles are painted had
13 no relevance to the results of the crash test,
14 correct?

15 A. Yeah, the color is not a significant
16 variable in this instance.

17 Q. Right. And what did you do to determine
18 whether any of the variables you've mentioned are
19 significant to the crash test?

20 A. So, what I'm doing is identifying the --
21 the differences, how additional variables have been
22 changed, and reporting based on the available
23 materials, what those differences are.

24 And from experience, I know that those
25 variables are significant. We know that the amount

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1 of overlap in a crash test is significant. There's a
2 great deal of published test data, research that
3 quantifies how overlap influences intrusions and
4 occupant injuries.

5 We also know that weight from, you know,
6 basic physics, basic scientific principles can
7 influence vehicle motion, the dynamics of the
8 vehicle, based on where that weight is placed
9 relative to the center of gravity.

10 So these are -- you know, the -- the test
11 was set up to run apparently in a way that was --
12 replicated the subject crash. But yet I'm pointing
13 out all the ways that it didn't.

14 Q. Have you done any work to quantify the
15 impact of either the offset or the weight issues that
16 you just mentioned?

17 MS. CANNELLA: Objection, asked and
18 answered.

19 THE WITNESS: So I think if Mr. Grimes
20 wants to draw significant conclusions about the
21 influence of the lift kit on -- on this subject
22 crash, he needed to do that work. He needed to run
23 either additional tests or run the tests in a
24 different way that more closely replicated the
25 subject crash.

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1 BY MR. HILL:

2 Q. Okay. Speaking of that, how would you
3 have ballasted the Ford Escape, if you were the
4 person directing the test?

5 MS. CANNELLA: Objection, foundation, I
6 guess.

7 THE WITNESS: So, I highlight later in my
8 report that we know -- we -- we -- we know who the
9 occupants were. We can identify the weights of the
10 occupants. So, for example, the -- the ballasting
11 for the front row could have represented Santana,
12 Kelly and Joshua Bryson's weights.

13 We know Cohen Bryson's weight. We know
14 the car seat weight. So all of those could have been
15 represented much more accurately with ballast than --
16 than was actually performed.

17 BY MR. HILL:

18 Q. And how would you do that?

19 A. So there are more ballasting methods you
20 can use. For example, for the occupants you can
21 use -- there are water ballast tanks that can
22 represent the human form that could be used. Or an
23 ATD could be used.

24 Q. What additional modifications you would --
25 would you make to the -- to the test Escape with

1 regard to the ballasting?

2 MS. CANNELLA: Asked and answered.

3 MR. HILL: No, it's what additional.

4 He -- he just said he'd add weight for the passengers
5 and so forth.

6 BY MR. HILL:

7 Q. Would you do anything else?

8 A. Well, if the purpose of the test was to
9 replicate the subject crash as closely as possible
10 with only the variable off, right, then you would
11 also represent the cargo.

12 Q. And how would you represent the weight of
13 the cargo in your test?

14 A. Well, by placing the objects that were
15 clearly identified. So we know the Shop Vac, we know
16 the camping chairs. We have images from the scene
17 and subsequent inspections that -- that help to
18 locate that luggage in the cargo space and on the
19 second row seat.

20 So you would -- the approach that you
21 could take would be to match as closely as possible
22 with the available weight information the subject
23 crash and then see where -- where the weight
24 deficiency was. And then establish what additional
25 ballasting, if any, was necessary, including adding

1 fuel to the fuel tank or Stoddard solvent to the --
2 to the fuel tank.

3 Q. Anything else?

4 A. Those are some examples of the process
5 that could have been followed that would have more
6 accurately represented the weight in the crash test.

7 Q. All right. With regard to the offset and
8 overlap, what would you change, if you were the
9 person directing the crash test?

10 A. So, some significant effort was made to
11 align the Escape to the guide rail. So the tolerance
12 of the guidance system for the F-250 was presumably
13 understood by the -- by the Exponent test engineer.
14 So that would be where I would start, is
15 understanding the accuracy and tolerance -- lateral
16 tolerance from the guide system to see how that
17 would -- how that could possibly affect the actual
18 impact offset.

19 Q. All right. And once you understood that
20 guidance process, what changes would you make to it?

21 A. I haven't been to the test site. I don't
22 know all the details in the guidance system. It's
23 not -- that's something, at least, beyond my ability
24 to answer at this stage.

25 THE REPORTER: I'm sorry. I need you to

1 repeat what you just said, sir.

2 THE WITNESS: Yeah, that's a -- that's a
3 question I can't answer, because I haven't sufficient
4 information on -- on the guidance system used, other
5 than it failed to hold the intended offset.

6 BY MR. HILL:

7 Q. Are you aware of any guidance system in
8 your experience that is able to hold a specific
9 offset?

10 A. I'm aware of partial overlap tests being
11 conducted, where there is a tolerance related to
12 those overlaps and those testing agencies are able to
13 control those overlaps for their tests.

14 Q. Do you know what the tolerance levels are
15 for those tests?

16 A. Uhm, no, I -- I -- I haven't prepared for
17 that question today. I know that they -- they do
18 hold tol- -- tolerances for valid tests, but off the
19 top of my head I can't figure those.

20 Q. Do you know the tolerance level that is
21 applicable to the crash test in this case?

22 A. Well, based on my analysis of an
23 additional four inches of offset, what I can see is
24 that the error is somewhere around 36 percent. That
25 is -- that's a significant error relative to the

1 original stated objective of the offset of 10.8
2 inches -- of about 10.8 inches.

3 Q. What would you consider to be a -- an
4 appropriate tolerance for the offset in this crash
5 test?

6 A. I think, in this instance, you'd be
7 looking at trying to achieve something significantly
8 lower than 34 percent. Again, what I would
9 reference, if it was me conducting the test, would be
10 standard industry offset test procedures and the
11 acceptable tolerance that they allow to still have a
12 test that's consistent with their intended procedure.
13 And I would reference that offset. I don't have that
14 for you today, but that was what -- that is what I
15 would reference.

16 Q. All right. Let's talk about the parking
17 brake. If I understand, one of your opinions is that
18 the Escape's parking brake was possibly engaged in
19 the test. Were you able to read the deposition of
20 Charlie Crosby, prior to this deposition?

21 A. Uhm, I have reviewed some of it. I
22 believe he stated that the parking brake was
23 disengaged.

24 Q. Do you have any reason to dispute his
25 testimony?

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1 A. Uhm, the process of documenting the test
2 with the photographs showing engagement and then
3 disengaging it seems unusual to me. In the sense
4 that if you're trying to run a test with parking
5 brake disengaged, why would you engage it at all and
6 run the possibility that someone forgets to disengage
7 it?

8 Q. Do you have any evidence that the parking
9 brake was engaged, other than the photograph
10 Mr. Crosby took prior to the test?

11 A. No, that's the evidence I'm utilizing to
12 say it's possibly engaged during the test.

13 Q. How would the parking brake, if it was
14 engaged, add resistance to forward motion?

15 A. Well, you have braking applied to the
16 vehicle that wasn't the case during the subject
17 crash.

18 Q. How would that manifest itself? Would --
19 would the rear wheels of the Escape skid during the
20 test?

21 A. Sorry, you're asking a hypothetical
22 question I'm not sure when, in relation to what.

23 Q. Yeah, let me ask it another way. If the
24 parking brake were engaged during the test, would it
25 prevent the rear wheels of the Escape from rolling

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1 upon impact?

2 A. So, it, uh -- it depends on the time of
3 the duration allowed for the F-250 to strike the rear
4 wheels. And that -- and the distance that's traveled
5 during that period. So it would depend on the
6 engagement of the structures. So it would be
7 different between the -- the subject crash and crash
8 test, because there's a full line of difference.

9 So there -- again, that's -- that's not a
10 straightforward question to answer. But the point
11 is, is that, again, if the parking brake was engaged,
12 it is inconsistent with the subject crash.

13 Q. Yeah, my question was just about the crash
14 test, not about the subject crash. Because we -- we
15 don't believe the subject crash -- the parking brake
16 was not engaged, at the time of the subject crash,
17 correct?

18 A. That's my understanding.

19 Q. Right. So I'm just asking about the crash
20 test, all right? And the question is, in the crash
21 test, if the parking brake had been engaged, would it
22 prevent the rear wheels of the test Escape from
23 rolling upon impact?

24 A. It's, uhm -- it certainly could influence
25 either the rolling or the rate of rolling.

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1 Q. And how would it influence it?

2 A. Well, you have braking applied to the rear
3 axle versus in a disengaged state no braking.

4 Q. So would the parking brake prevent the
5 rear wheels of the Escape from rolling upon impact?

6 A. I think I've just answered your question.

7 Q. Well --

8 A. You need --

9 Q. Go ahead.

10 A. So they would either affect -- either
11 prevent rolling or change the rolling rate --

12 Q. I --

13 A. -- or the resistance to rolling.

14 Q. And how would they change the rolling
15 rate?

16 A. You now have additional braking affect on
17 the rear wheels. So the force to push a vehicle with
18 braking versus without braking is -- is different.

19 Q. Have you done anything to determine how
20 the parking brake being engaged would have changed
21 the rolling rate of the rear wheels in the crash
22 test?

23 A. So, as I've stated previously, my
24 objective was to highlight inconsistencies between a
25 crash test and the subject crash. This is

1 potentially another one.

2 Q. So the answer is no, you haven't done
3 anything to determine what the change in the rolling
4 rate would be of the rear wheels in the test, if the
5 parking brake had been engaged?

6 MS. CANNELLA: Object to the form of the
7 question. Misstates the testimony.

8 BY MR. HILL:

9 Q. Go ahead.

10 A. The -- the emphasis is on the test
11 engineer to ensure that the stated objective is
12 satisfied. My -- my objective in -- in looking at
13 the test data and writing this report wasn't to try
14 and determine the difference of all of these
15 variables. That is -- it's certainly beyond the
16 scope of work. And the point simply is that that is
17 another potential difference between the crash test
18 and the subject crash.

19 Q. Have you performed any calculations to
20 determine how this difference between the subject
21 crash and the test crash would have impacted the test
22 crash?

23 A. Sorry, I didn't follow that question. Can
24 you repeat it, please?

25 Q. Sure. You just pointed out that another

1 potential difference between the subject crash and
2 the test crash is the potential for the parking gate
3 (sic) to be -- having been engaged during the test
4 crash.

5 Have you performed any simulations,
6 calculations, analysis or testing to determine the
7 impact of this difference between the test crash and
8 the subject crash on the test crash?

9 A. I believe I already provided that answer,
10 but it's not -- in forming the opinions I have in
11 this report, I am trying to understand the veracity,
12 accuracy of the crash test and whether or not
13 meaningful conclusions can be drawn compared to the
14 subject crash.

15 I'm not trying to isolate and identify the
16 contribution or the differences in all of these
17 variables. That -- that is something that should
18 have been considered, when performing the crash test
19 and making sure that only one variable was being
20 changed during the crash test.

21 Q. So can we agree the answer is no, you've
22 not performed any testing, calculations, simulation
23 or analysis to determine the impact of the parking
24 brake on the level of crush or intrusion that
25 occurred in the test?

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1 MS. CANNELLA: Object to the form of the
2 question. He just described his analysis.

3 BY MR. HILL:

4 Q. Go ahead.

5 MS. CANNELLA: Misstates his testimony.

6 THE REPORTER: I'm sorry, what was the
7 last part of your objection, Ms. Cannella?

8 MS. CANNELLA: Misstates his testimony.

9 BY MR. HILL:

10 Q. Go ahead.

11 A. Yeah, the -- the opinion is -- is that if
12 the parking brake was engaged during the crash test,
13 that is inconsistent with the subject crash.

14 Q. I'm going to move to strike as
15 unresponsive.

16 Let me ask it this way. Please describe
17 for me all testing, calculations or simulations that
18 you have done in connection with your analysis of the
19 crash test.

20 A. So, I've described my observations, my
21 opinions in the course of my report. I provided you
22 my work product. So, you're welcome to review that.
23 That's a very broad question. I'm not going to try
24 and answer that, when we can go through both my
25 report and my work product.

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1 Q. Is it fair to say that all testing,
2 calculations, simulations, and/or analysis that
3 you've done in connection with analyzing the crash
4 test are contained within your report?

5 A. Uhm, certainly my -- my report contains my
6 opinions and findings of that analysis and my work
7 product and the file that you have contains any
8 associated and supported work.

9 Q. Great. Turning now to the sunroof. Do
10 you know whether the Escape used in Mr. Buchner's
11 simulation had a sunroof?

12 A. I, uhm -- I will defer you to Mr. Buchner
13 on that question.

14 Q. Okay. So you don't know, as we sit here
15 today, whether it did or not -- did not?

16 A. I have not spent a great deal of time
17 understanding the simulation that Mr. Buchner was
18 performing.

19 Q. Okay. You mentioned before that the
20 height of the crash F-250 was higher than the height
21 of the test F-250. We can agree on that, correct?

22 A. That's right. The height in the subject
23 crash was higher.

24 Q. Have you done any work to determine the
25 impact of the F-250 height difference on the roof

1 crush experienced in the test Escape?

2 A. I've made observations on the deformation
3 patterns of the crash test relative to the -- the
4 subject crash. And I'm simply stating, because maybe
5 Mr. Grimes wasn't aware, that roof structures do
6 differ, maybe more than he understands, between
7 sunroof vehicles and none sun- -- and nonsunroof
8 vehicles.

9 Q. Have you done any work to determine the
10 impact of the height of the F-250 in the test crash
11 on the extent of the roof crush experienced by the
12 test Escape?

13 A. As compared, I think you can see it on
14 page 9 -- Image 9. I looked at the change in roof
15 deformation between the crash test and the exemplar
16 Escape.

17 Q. Okay.

18 A. And you can see that there is -- sorry,
19 the crash test and the subject crash. And you can
20 see that there's bulging in the roof in the crash
21 test.

22 Q. And this is Image 9 of your report; is
23 that correct?

24 A. That's -- that's right.

25 Q. And that's what I've put on the screen?

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1 A. Correct.

2 Q. And that is a comparison between the crash
3 test and an exemplar Escape roof comparison.
4 Under -- I don't understand that -- that description
5 of the image. Can you explain that for me?

6 A. Yeah, that's an overlay of the point cloud
7 data, I think, of all three vehicles in Exemplar A,
8 the subject crash and the crash test. And the --
9 what you're seeing is the surface of the roof from
10 the crash test and the bulging of the roof pattern,
11 which is not exhibited on the subject crash.

12 Q. And the exemplar Escape that you used, did
13 it have a sunroof or did it -- or not?

14 A. Well, the -- the roof height and surface
15 doesn't change significantly between the sunroof and
16 nonsunroof.

17 Q. Well, what was the purpose of adding a --
18 a third vehicle to this image, the exemplar Escape?
19 I don't understand.

20 A. Simply, I compared an overlay of the scan
21 data and observed that the roof deformation on the
22 crash test was greater than in the subject crash.

23 Q. And did you do any work to determine
24 whether the height of the F-250 in the test crash was
25 a factor in the difference between the roof crush in

1 the subject crash and the roof crush in the test
2 crash?

3 A. Uhm, I'm pointing out that roof structures
4 vary between sunroof and nonsunroof vehicles. And so
5 if you're trying to replicate the subject crash, it
6 would be advisable to use a body structure that is
7 the same, which has a sunroof. This crash test was
8 conducted with a nonsunroof body and we know that
9 sunroof structures are reinforced relative to
10 nonsunroof structures.

11 Q. Did you do any work to determine the
12 impact of the difference in height between the test
13 F-250 and the subject F-250 on the roof crush
14 exhibited in the test Escape?

15 A. Uhm, I'm pointing out that the roof
16 strength and stiffness in a nonsunroof body structure
17 is lower than with a sunroof body structure. So it's
18 another example of the crash test not matching or
19 being inconsistent with the subject crash.

20 Q. Move to strike as unresponsive.

21 I'll ask it again. Did you do any work to
22 determine the impact of the difference in heights
23 between the subject F-250 and the crush -- crash
24 F-250 on the level of roof crush exhibited by the
25 test Escape?

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1 MS. CANNELLA: Object to the form of the
2 question. Confusing and he's testified about this
3 already.

4 MR. HILL: He hasn't answered the
5 question. It's a yes or no question. Have you done
6 any work in that regard?

7 MS. CANNELLA: Same objections.

8 THE WITNESS: I mean, I comment on the
9 level of roof deformation between the subject crash
10 and the crash test vehicle.

11 BY MR. HILL:

12 Q. And have you determined the impact of the
13 height of the subject F-250, as compared to the test
14 crash F-250 with regard to your observations of the
15 difference in the roof crush between the test Escape
16 and the subject Escape?

17 A. So, I've highlighted the -- the
18 differences in the deformation pattern of the crash
19 test Escape versus the subject Escape. Again, we
20 know there's a difference in the body stiffness. In
21 terms of how it would influence the results of the
22 crash test, I've not tried to isolate one of many
23 variables that were changed.

24 Q. Great. Have you done -- expanding on the
25 answer you just gave. Have you done any work,

1 whether it be testing, calculations, simulations,
2 analysis, to isolate the variable of a sunroof versus
3 not having a sunroof on the results of the crash
4 test?

5 A. So, again, there's a -- an example here of
6 the way the crash test was run that is inconsistent
7 with the aims of the crash test as stated by the
8 crash engineer. And I've not attempted to understand
9 any contribution that may have arisen from that
10 variable being changed.

11 Q. Thank you. Do you know whether the lack
12 of a sunroof in the test Escape increased the crush
13 experienced by the test Escape?

14 A. I know from my experience that sunroof
15 body structures are both stiffer and stronger based
16 on prior vehicles I've worked on. And so, therefore,
17 by testing a nonsunroof Escape, you have a slightly
18 softer structure, based on the geometry of the
19 sunroof reinforcement versus the baseline roof bows.

20 Q. Have you quantified this difference?

21 A. I'm simply pointing out that there is a
22 difference and it would add yet another variable to
23 the difference in the subject crash and the crash
24 test.

25 Q. Have you quantified the difference?

1 A. I've identified that there is additional
2 roof deformation in the crash test than the subject
3 crash. Beyond that, no.

4 Q. You say -- I'm sorry. Did you say beyond
5 that, no? I couldn't hear your response, I'm sorry.

6 A. That's right. I just -- the image you
7 have on the screen, I'm showing -- I quantified that
8 the roof bowed for the crash test, relative to the
9 subject crash.

10 Q. Okay. And that's the extent of your work
11 or efforts with regard to determining whether the
12 lack of a sunroof increased the crush in the test?

13 A. So my objective here was to identify
14 whether or not the crash test was run in a consistent
15 manner to the subject crash. Here is another example
16 where that wasn't the case.

17 Q. Right. That's not my question. I
18 understand that. My question was, have you done
19 anything to quantify or explain your opinion that --
20 no, scratch that. I'll go back to my original
21 question.

22 Have you done anything to quantify whether
23 the lack of a sunroof -- sunroof increased the crush
24 in the test?

25 A. I am simply providing the opinion that

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1 sunroof roof structures are stiffer and stronger than
2 nonsunroof roof structures. And if you -- the
3 objective of the crash test was simply to isolate the
4 height difference, where everything else is being
5 matched as closely as possible, then why wasn't a
6 sunroof Escape used in the crash test?

7 MR. HILL: All right. I think it's time
8 we need to take another break. Let's go off the
9 record for about five to ten minutes.

10 THE VIDEOGRAPHER: Okay. Off the record,
11 10:51.

12 (Recess was taken from 10:51 a.m. to 11:16
13 a.m.)

14 THE VIDEOGRAPHER: Back on the record.
15 The time, 11:16.

16 BY MR. HILL:

17 Q. Mr. Roche, do you know whether vehicle
18 manufacturers are required to run separate compliance
19 tests for rear impacts for the same model vehicle,
20 comma, one with a sunroof, comma, one without?

21 A. No. In my experience, compliance tests
22 are certainly performed for roof crush and also for
23 overall body stiffness. Testing is conducted with
24 both, with and without sunroof. As to 301, I -- I'm
25 not sure.

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1 Q. Are you aware of tests beyond 301 that
2 actually require the manufacturer to perform a test
3 both with and without a sunroof?

4 A. I'm sorry. Can you just ask that
5 question, again, please?

6 Q. Sure. I believe you said you're not sure
7 if 301 requires both tests, as I've described, right?

8 A. Right.

9 Q. And you made a general reference to
10 testing with and without. And I'm saying, are you
11 aware of any other compliance test that's out there
12 that does require the manufacturer to test both a
13 sunroof model and a nonsunroof model?

14 A. And the example I gave you was roof crush,
15 which is 216A.

16 Q. 216A; is that correct?

17 A. That's right.

18 Q. And it's your understanding that the
19 manufacturer must test both the sunroof and the
20 nonsunroof model to comply with 216A?

21 A. Correct. When I was writing compliance
22 reports for Jeep for roof crush performance, we would
23 always run both configurations and submit compliance
24 reports. But I was -- I was not responsible for
25 compliance to 301, per se, because that's a -- that's

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1 a vehicle test, not a body system test.

2 MS. CANNELLA: Can I ask a question, if
3 you're done, Mr. Roche, just on the record? Is there
4 anybody else attending the deposition by video or
5 phone or anything aside from you, Mr. Hill for
6 Defendants?

7 MR. HILL: No.

8 MS. CANNELLA: Okay. Thank you.

9 BY MR. HILL:

10 Q. While you were in the automotive industry,
11 you mentioned you were involved with compliance
12 testing. Were you ever involved in any testing
13 outside of the compliance framework?

14 A. Yeah, absolutely.

15 Q. All right. Can you just describe that for
16 me briefly, just so I understand it.

17 A. Yes. By compliance testing, I mean
18 specific to FMVSS. But there's plenty of other
19 testing that is conducted for both crashworthiness
20 and other test requirements that is -- that is
21 considered noncompliance -- or it's not that it's
22 noncompliant, it's that it's not a compliance test.

23 Q. Right. And in all of those tests that you
24 performed that relate to vehicle performance, did you
25 comply with the procedures that related to compliance

1 testing?

2 A. I'm -- so, I think I understood your
3 question correctly. When -- the way compliance
4 testing works in the auto industry is certainly for
5 Federal Regulations. It is a self-compliance system.
6 For European regulations, it is not. But -- but as
7 part of self-compliance, you have to run the tests
8 according to the test procedure, in order to have a
9 valid compliance report.

10 Q. Right. And I -- I'm referencing
11 the -- what you called, I think, noncompliance
12 testing, the vehicle performance testing, testing
13 that would be done by automakers, not for compliance
14 purposes, but for performance purposes. You said you
15 had experience with the noncompliance-type testing.
16 Did I understand that correctly?

17 A. That's correct, yes.

18 Q. And give me some example of the
19 noncompliance/vehicle performance related testing
20 that you were involved with.

21 A. Yes, so better term is nonregulatory. So
22 there's lots of tests that I was involved in that was
23 nonregulatory tests. Meaning, that those are tests
24 you still wanted to satisfy for a variety of reasons.
25 An example related to crash would be NCAP, for

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1 example. Although, NCAP is administered by NHTSA,
2 you don't have to satisfy any sort of star rating for
3 NCAP. NCAP is a consumer information test.

4 So manufacturers -- some of the ones I
5 would work with -- would run tests to see if they
6 were meeting their objectives relative to
7 nonregulatory test modes. So that when the
8 regulatory body tested their vehicle, they knew --
9 they would know what sort of performance they would
10 achieve.

11 Q. Right. And NCAP stands for New Car
12 Assessment Program?

13 A. That's correct.

14 Q. All right. And are you saying it -- it
15 doesn't deal at all with the compliance with
16 regulatory standards?

17 A. NCAP is -- is a testing that goes above
18 and beyond FMVSS. So although the tests may look
19 similar, the tests aren't meant to be in some
20 instances identical. But complying with 208 and your
21 NCAP star rating are two different things.

22 Q. Right. So 208 would be a 30-mile-per-hour
23 test, where like NCAP might be a 35-mile-per-hour
24 test?

25 A. 208 is a whole host of different tests --

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1 Q. Right.

2 A. -- it's not just one test.

3 Q. Right. But you would agree, I mean -- so,
4 NCAP might be performance testing that's not required
5 by regulation, but you would follow the procedure for
6 the FMVSS standard that related to that testing, is
7 that what you're saying?

8 A. No. I was just describing some
9 nonregulatory test modes from -- that I have been
10 involved with.

11 Q. Okay.

12 A. You know, so, uhm, maybe slightly easier
13 explanation, if you switch to IIHS, which is the same
14 thing. IIHS conducts testing on vehicles. And
15 that's entirely nonregulatory. They -- they perform
16 tests and they inform the public about performance of
17 the vehicles, according to their tests. And they
18 produce test protocols that are available to explain
19 to manufacturers who are interested, how they will
20 conduct their tests when they -- if they elect to buy
21 and test their vehicles.

22 So manufacturers typically will conduct
23 their own testing according to the IIHS test
24 standards. And they will follow, obviously, the
25 protocol that IIHS would use. And that way they can

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1 get a good indication of whether -- how that vehicle
2 will perform to the IIHS test. Same applies for
3 NCAP.

4 Q. Do you know whether any IIHS procedures
5 for conducting their testing were not complied with
6 by Exponent and the tash cresh (sic) in this case?

7 A. So, these crash tests that were conducted
8 was trying to replicate the subject crash. And the
9 subject crash wasn't similar to any IIHS test that
10 I'm aware of. And, therefore, there wouldn't be an
11 IIHS procedure that encompassed the entire test.

12 Q. And is the same thing true for procedures
13 related to FMVSS testing?

14 A. So, FMVSS, which is a compliance test,
15 there is a fuel system integrity test. There is a
16 well-defined procedure on how to run a fuel system
17 integrity test. Again, that test is different from
18 the subject crash. But it is a good reference point
19 on how to conduct a high-speed, rear-impact test.

20 Q. Are there any FMVSS required regulatory
21 tests that are similar to the subject crash?

22 MS. CANNELLA: Object to the form of the
23 question. Similar is a vague word.

24 MR. HILL: He used the term "similar" in
25 his last answer. So I'm using it in the way he used

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1 it.

2 MS. CANNELLA: Just stating my objection.

3 BY MR. HILL:

4 Q. Go ahead.

5 A. So, the closest FMVSS is 301 to the
6 subject crash, but -- but I'm not suggesting it's
7 identical.

8 Q. Okay. Were you ever involved in any --
9 and correct me if I use the wrong terms, I'm trying
10 to use what you stated -- nonregulatory
11 performance-related crash testing that involved
12 analysis of rear-impact collisions?

13 A. Uhm, so in addition to nonregulatory
14 tests, there are, uhm -- some manufacturers have --
15 do carry load -- load cases or test modes. So these
16 are -- these are tests that are not required by any
17 government agency and are not going to be used for
18 informing the public, but the manufacturer has
19 established that their own internal requirements
20 require them to do additional testing. And so I have
21 been involved in rear impact load cases and tests,
22 which are not compliance for nonregulatory tests,
23 yes.

24 Q. And you say rear impact load cases, is
25 that -- load test. Was that the term you used?

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1 A. Yeah, load cases, crash tests.

2 Q. All right. And in any of those load cases
3 or crash tests involving rear impact, were any of
4 those performed without Stoddard solvent in the gas
5 tank?

6 A. Yeah, off the top of my head I -- I can't
7 answer that. This is some time ago. You know, I'd
8 refer you to my earlier answer, which is -- you know,
9 even in -- even in due care load cases, you're still
10 trying to relate either back to prior incidents that
11 the manufacturers' learned from or some sort of
12 established test procedure.

13 You know, it's very infrequent that
14 vehicles are impacted with an empty fuel tank. So
15 fuel is usually -- and fuel leakage is -- is a big
16 concern. And so representing a fuel substitute that
17 allows you to monitor the potential for fuel leakage
18 is -- is very typical in my experience.

19 Q. Fuel leakage was not an issue in the
20 subject crash, correct?

21 A. Uhm, yes. I don't remember that being
22 noted on the police report or any of the scene
23 images.

24 Q. And I believe your answer to the last
25 question was that you're not -- you can't recall, as

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1 you sit here today, whether any of the testing you
2 just described that you were involved with involved a
3 test that did not include Stoddard solvent; is that
4 correct?

5 A. Yeah. I can't remember the detail of any
6 fuel care --

7 Q. Okay.

8 A. -- test I've been involved with. But what
9 I did state very clearly was that typically,
10 especially rear impacts, fuel system leakage is a
11 concern. And oftentimes that was a focus of any
12 testing that was conducted. Therefore, the fuel was
13 represented, so that could be checked.

14 Q. Sure. I'm going to attempt to share --
15 whoops. All right. Can you see my shared screen?

16 A. Yes, I can.

17 MR. HILL: All right. This comes from the
18 material that you presented -- or produced to us or
19 that Ms. Cannella produced to us. And I believe it's
20 just entitled PowerPoint presentation. But it's
21 labeled as Bryson 9643 through 9646. And I'd like to
22 mark this as whatever our next exhibit is.

23 (Defendant's Exhibit No. 3 was marked for
24 identification.)

25 BY MR. HILL:

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1 Q. Is this a PowerPoint presentation from
2 your files in this case?

3 A. Yeah, I think the name of the document is
4 Scan Comparison.

5 Q. All right. Sorry if I -- it did -- I just
6 was reading from the top, and I guess it didn't show
7 it. Sorry.

8 All right. So, the first page of this we
9 have the subject and an exemplar placed over each
10 other from a number of different angles. And I
11 assume the purpose of this is just to show that the
12 subject wheelbase did not change after the subject
13 accident; is that fair?

14 A. That's -- that's right. That was the
15 point of that image showing the -- obviously, the
16 subject vehicle was on a hoist. So you -- you've got
17 a slight difference in the wheel positions there.
18 And the alignment is based on the body, the undamaged
19 body.

20 Q. Sure. And we've already talked about the
21 next page, where you have the roof panel bowing
22 figure or image that was in your report.

23 A. Yes.

24 Q. Is that the same image? Am I correct
25 about that?

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1 A. Right.

2 Q. And then you also have a exemplar
3 wheelbase compared to the crash test wheelbase
4 showing a 5-inch reduction in the wheelbase?

5 A. Yes, about five inches.

6 Q. Okay. Yeah, I'm sorry, about.

7 All right. And then if we go ahead to
8 what's labeled as Bryson 9646. This doesn't really
9 have much of an explanation. I think I understand
10 what it means. But could you explain what these two
11 images represent?

12 A. Yes. So this -- this image is actually in
13 my report. It's Image 7.

14 Q. Right.

15 A. So, it's entitled "Static Seat Angle
16 Comparison." So here on the left, you've got the
17 point cloud from the crash test overlaid with the
18 subject. Sorry, the crash test overlaid with the
19 exemplar Escape data. On the right you have the
20 subject Escape overlaid with the exemplar. And I'm
21 simply trying to compare the amount of seat back
22 deformation.

23 Q. And this is the static deformation from
24 after both crashes; is --

25 A. That's right, it's --

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1 Q. -- that correct?

2 A. These scans were taken post-crash, so it's
3 the static deformation, that's correct.

4 Q. Right. And you're saying that the crash
5 test deformation is the image on the left?

6 A. That's correct, yes.

7 Q. And it shows a 65-degree angle there.
8 What is that ang- -- what does that 65 degrees
9 represent?

10 A. That is the seat back relative to
11 horizontal plane.

12 Q. All right. And is that to represent where
13 the seat back was moved during the test crash?

14 A. No. So, it shows that the seat back angle
15 is largely unchanged between the crash test seat and
16 the exemplar seat. So the exemplar seat, as you can
17 see, is almost parallel. Seat back angle is almost
18 parallel to the dotted line, which is the crash test
19 seat back angle.

20 Q. Gotcha. And then the figure on the right
21 is showing the static position of the subject Escape
22 seat, correct?

23 A. That's correct, yeah.

24 Q. Okay.

25 A. You can see that that angle now is more

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1 than 90 degrees to the horizontal, as shown in the --
2 in the crash vehicle.

3 Q. Great. Would you agree that the rear seat
4 back was deformed in the crash test?

5 A. Uhm, so I think I'm saying that there was
6 some translation of the seat back and the seat in the
7 crash test.

8 Q. And how is translation different from
9 deformed?

10 A. So, the seat appears to have moved
11 relative to the original position in the X direction,
12 as opposed to the seat back being displaced in a way
13 that would effect the occupant kinematics.

14 Q. Do you know how far the seat was displaced
15 in the X direction?

16 A. No, I -- I didn't measure that. But, I
17 mean, you can get a sense from that -- that image.

18 Q. All right. And are you saying that in the
19 Y direction the seat back did not move at all from
20 its original position?

21 A. No, I'm not saying that. You can see from
22 some of the pictures of the seat -- I think we have a
23 picture on page -- on page 6, which is Image 5. You
24 can see the -- the seats appear to have -- so the
25 60/30 split has separated slightly and so there's a

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1 little bit of rotation around the X's axis. But in
2 terms of the forward displacement of the seat back,
3 it's certainly significantly less than the subject
4 vehicle.

5 Q. But there was some forward seat
6 displacement of the rear back in the crash test?

7 A. As -- as -- along with the seat base, yes,
8 this -- as is shown in that image that you have on
9 the screen.

10 Q. Okay. So you would agree that something
11 impacted the rear of the second row seat in the crash
12 test and displaced it both in the X and the Y axis?

13 A. No, that's not what I'm saying. I'm
14 saying --

15 Q. Okay.

16 A. -- that the underbody was loaded, the
17 underbody is deformed, as I -- as you mentioned
18 earlier. The wheelbase was actually reduced. And so
19 you've got some translation of -- of the seat and the
20 structure, which the seat is mounted to. And that's
21 depicted in that image.

22 Q. So is it your opinion that all of the
23 movement of the second row seat was due to the floor
24 displacement? Am I understanding that correctly?

25 A. I'm saying that, uhm, that level of

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1 intrusion analysis, I haven't conducted that. I'm --
2 I am showing you that the relative position of the
3 seat between the crash test and the subject crash --
4 I'm highlighting the seat back angle between the two.
5 And I'm stating that the entire seat was translated
6 in the -- in the crash test. And -- and
7 that's -- that's the degree of my observations.

8 Q. Okay. So just to be -- be clear, and I
9 don't mean to put words in your mouth. I believe I
10 just heard you say that you haven't analyzed the full
11 extent of the cause of the translation of the rear
12 seat in the crash test, other than to say that you
13 observed that at least some of that translation was
14 due to the movement of the floor of the Escape in the
15 crash test, is that fair?

16 A. Yeah, that's -- that's part of it. I
17 mean, there was no analysis conducted as part of
18 Grimes' work. He didn't really analyze seat motion
19 significantly, so I haven't been able to form any
20 opinions on his analysis.

21 Obviously, if the seat back had been
22 loaded significantly, you would expect the seat back
23 angle to change. And what I'm showing here is that
24 the seat back angle is largely unchanged between the
25 crash test post -- crash test Escape post-test to an

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1 exemplar seat back.

2 Q. And you haven't analyzed it, just like
3 Mr. Grimes haven't -- hasn't analyzed it, beyond what
4 you just described to me, is that fair?

5 A. That's right.

6 MS. CANNELLA: Objection, asked --

7 THE WITNESS: This is his test.

8 MS. CANNELLA: -- and answered.

9 BY MR. HILL:

10 Q. Okay. Sure. And you're not an expert in
11 biomechanics, correct?

12 A. Yeah, I don't -- I don't offer any
13 biomechanical opinions here.

14 Q. And you're not going to offer any opinions
15 in this case regarding the cause of Cohen
16 Bryant -- Cohen's injuries or death, correct?

17 A. No. I mean, the opinions I've offered
18 relate to occupant motion when a seat is rotated more
19 than 90 degrees. That would tend to force the
20 occupant towards the back of the front seat. And
21 that's the extent of my opinion.

22 Q. Okay. On page -- well, let's first cover
23 a general top- -- general term, "override." How do
24 you define the term "override," in the context of --
25 of its application to this case?

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1 MS. CANNELLA: Objection. How is this in
2 the scope of his report and supplemental report?

3 MR. HILL: Because he talks in the
4 supplemental report that the crash test did not
5 involve an override situation. It's one of his
6 opinions --

7 MS. CANNELLA: Okay.

8 MR. HILL: -- in the report. It's
9 directly --

10 MS. CANNELLA: I --

11 MR. HILL: -- relevant to his opinion.

12 MS. CANNELLA: I withdraw my objection.

13 BY MR. HILL:

14 Q. Go ahead.

15 A. Yes. So in an override or underride case,
16 you have a lack of structural engagement between, in
17 this case, the frame rails of the truck and the
18 longitudinals of the SUV.

19 So here in the crash test, we can see that
20 the underbody and the longitudinals were engaged,
21 were deformed, were crushed, which is in stark
22 contrast to the subject crash vehicle, where the
23 underbody longitudinals were largely left intact and
24 the floor and upper structure was peeled away from
25 it.

1 Q. And just -- I think I understand it, but
2 just so the jury understands it. What do you mean by
3 "longitudinals"?

4 A. So, those are the energy-absorbing
5 structures in a -- in a unibody vehicle, a unitary
6 construction vehicle like a Ford Escape, when you
7 don't have a separate body and frame. So the frame
8 rails effectively are integrated within the body
9 structure. And so those -- there's various industry
10 terms, rails, longitudinals, essentially substitute
11 for the frame rails in a unibody vehicle. The rear
12 bumper beam, the beam structure is attached in line
13 with those rails. And that is the structure that is
14 designed and intended to absorb energy and dissipate
15 energy in a rear-impact event or conversely in the
16 front of the vehicle, front impact.

17 Q. Right. So -- just so I make sure I
18 understand, if the -- if there's any engagement
19 between the longitudinals and the bumper of the
20 F-250, that would not qualify as an override?

21 A. You can have --

22 Q. That --

23 A. You can have partial overlap, partial
24 misalignment. In this instance, there was good
25 engagement, there was good structural deformation of

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1 the underbody, and that's what I'm using to form the
2 basis that there was compatibility and no override in
3 this crash.

4 Q. Okay. In the subject crash, was there
5 impact between the Cs (ph) brackets and the bumper
6 beam of the -- of the Escape?

7 A. So, I've got a comparison image on --
8 which is Image No. 2, where I compared the rearview
9 of both Escapes, crash test on the left, subject
10 crash vehicle on the right. And in terms of
11 override, that's really what I'm talking about.

12 On the left you can see the underbody has
13 been deformed and displaced forward in vehicle. On
14 the right, the underbody is largely exposed and the
15 upperbody is being pushed forward relative to the
16 underbody.

17 Q. My question was, was -- was there contact
18 between the F-250 Cs (ph) bracket in the subject
19 crash and the bumper beam of the Escape in the
20 subject crash?

21 A. Yes, I think that question is going to be
22 beyond the scope of this report. This -- I can
23 happily talk to you about my opinions related to the
24 Cs (ph) brackets on the crash test. I certainly
25 reviewed those. And I'm prepared today to discuss my

1 opinions on -- on the Cs (ph) brackets in the crash
2 test.

3 Q. Well, I'm trying to understand your
4 definition of override. And there's a description of
5 override that you just gave that I'm trying to see if
6 that applies to the subject crash or not.

7 So the question is, if there's Cs (ph)
8 impact to the bumper beam in the subject crash, why
9 do you still consider that to be an override
10 condition, as opposed to the crash test, which you've
11 opined is not an override condition? That's what --

12 MS. CANNELLA: Objection to --

13 MR. HILL: -- that's how it's relevant to
14 your subject opinions.

15 MS. CANNELLA: I'll object to that
16 question as to how it relates to subject crash, but
17 not as to it relates to the crash test.

18 BY MR. HILL:

19 Q. Go ahead.

20 A. Yeah, so when you describe an override,
21 you're -- you're talking about many aspects and not
22 necessarily the behavior of one single part of the
23 structural engagement. So rather than the
24 effectiveness of the Cs (ph) bracket, it's effect on
25 the subject crash, I'm making an override opinion

1 based on the fact that the large part of the front of
2 the F-250 was able to move relative to the underbody
3 without engaging it significantly, without causing it
4 to crush and collapse in a way that it was designed
5 to.

6 So in that right image there, if there had
7 been compatibility, if there had been no override, we
8 wouldn't see those exposed longitudinals hanging
9 rearward of the vehicle with the upper structure
10 stripped off of it.

11 Q. I understand. Based upon your answer
12 there, do you believe that in the crash test the
13 longitudinals operated as designed in the test
14 Escape?

15 A. No. I'm offering the opinion that the
16 longitudinals and underbody structure was involved in
17 a crash event, was deformed, and absorbed energy and
18 dissipated the energy.

19 Relative to design -- Ford's design
20 intent, I can't opine on that. But I can tell you
21 that those structures played a -- a role in the crash
22 test that didn't in the subject crash.

23 Q. Understood. You give the opinion on page
24 12 that the Exponent crashed (sic) test intrusion
25 increase is likely due to the test setup. Can you

1 say, with a reasonable degree of scientific
2 certainty, that the Exponent crash test -- crash test
3 intrusion increase was due to the test setup?

4 A. Well, on page 12 what I say is, if the
5 crash test intrusions were higher -- because I'm
6 simply responding to what Mr. Grimes' claims, that
7 the intrusions were higher in the crash test. I'm
8 simply responding. I didn't do an intrusion
9 analysis. I don't have intrusion values or a
10 comparison of the intrusion values. Mr. Grimes came
11 up with an opinion on that, which I think I discuss
12 somewhere else in the report.

13 But my comment there is related to the
14 fact that if they were higher, it would be unusual
15 because you have good underbody structural
16 engagement. And based on my experience, based on the
17 research, based on the available testing out there
18 for compatibility, when you have greater
19 compatibility, you have less intrusion, not more.

20 Q. Move to strike as unresponsive. I'll ask
21 it again.

22 Can you say, with a reasonable degree of
23 scientific certainty, that the Exponent crash test
24 intrusion increase was due to the test setup? Yes or
25 no?

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1 MS. CANNELLA: Asked and answered.

2 THE WITNESS: I'm not -- I'm not opining
3 on whether the intrusions were increased or not. I'm
4 responding to Mr. Grimes' statement that he thinks
5 they were.

6 BY MR. HILL:

7 Q. Okay.

8 A. And I'm also saying that there are so many
9 differences, so many variables have been changed
10 between the crash test and subject crash that drawing
11 any conclusion about the level of intrusions is -- is
12 impossible, because too many variables to -- have
13 been -- been modified, which is against the stated
14 intent of GSI 34 (ph), which is the right height
15 change.

16 Q. So for that very same reason, it's
17 impossible for you to opine as to whether the test
18 setup led to the test intrusion increase, correct?

19 MS. CANNELLA: Object to the form.

20 THE WITNESS: I'm saying that there were
21 many inconsistencies in the -- in the crash test
22 relative to the subject crash. And it was conducted
23 in an improper manner, if you're trying to follow
24 scientific process to isolate the contribution of
25 just right height difference.

1 BY MR. HILL:

2 Q. Have you told me, during this deposition,
3 the -- a -- a full list -- well, scratch that.
4 Scratch that.

5 MR. HILL: Let's take a -- like a
6 two-minute break.

7 MS. CANNELLA: How much longer do you
8 have? Because we only have ten minutes left.

9 MR. HILL: Yeah, I won't need more than
10 two minutes.

11 MS. CANNELLA: Okay. Great.

12 THE VIDEOGRAPHER: Off the record at
13 11:50.

14 (Recess was taken from 11:50 a.m. to 11:57
15 a.m.)

16 THE VIDEOGRAPHER: Back on the record.
17 The time, 11:57.

18 BY MR. HILL:

19 Q. Mr. Roche, are there any opinions that we
20 did not discuss today and that are not listed in your
21 report that you intend to give with regard to the
22 crash testing conducted by Exponent?

23 A. Well, some of the opinions that are in the
24 report we haven't discussed.

25 Q. And that's why I -- why I asked it the way

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1 I asked it. So we have what we discussed, and then
2 we have the opinions in the report. Are there any
3 opinions beyond those two topics that you intend to
4 give with regard to the Exponent crash testing?

5 A. No, they are captured in this report.

6 Q. All right. And the basis for those
7 opinions, all testing, simulations, calculations,
8 analysis, work, scientific methodology, all of that
9 that goes to support the opinions you intend to give
10 regarding the crash test have either been discussed
11 today in the deposition or are contained in your
12 report; is that correct?

13 A. That's correct.

14 MR. HILL: Okay. I have no further
15 questions. Thank you, Mr. Roche.

16 MS. CANNELLA: (Indicating.) I don't have
17 any questions either.

18 THE VIDEOGRAPHER: Okay. Off the record
19 11:58.

20 (The witness, after having been advised of
21 his right to read and sign the transcript, does not
22 waive that right.)

23 (Deposition was concluded at 11:58 a.m.)
24
25

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CERTIFICATE OF REPORTER

I, MARY K. STEPP, Notary Public for the State of South Carolina at Large, do hereby certify that the foregoing transcript is a true, accurate, and complete record.

I further certify that I am neither related to nor counsel for any party to the cause pending or interested in the events thereof.

Witness my hand, I have hereunto affixed my official seal this 1st day of August, 2024, at Campobello, Spartanburg County, South Carolina.



Mary K. Stepp, Notary Public
My Commission Expires:
March 1, 2028

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REQUESTED INFORMATION

(No information requested.)

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1 Tedra L. Cannella

2 tedra@cannellasnyder.com

3 August 2, 2024

4 RE: Bryson, Santana And Joshua v. Rough Country, LLC

5 7/17/2024, Christopher D. Roche (#6801963)

6 The above-referenced transcript is available for
7 review.

8 Within the applicable timeframe, the witness should
9 read the testimony to verify its accuracy. If there are
10 any changes, the witness should note those with the
11 reason, on the attached Errata Sheet.

12 The witness should sign the Acknowledgment of
13 Deponent and Errata and return to the deposing attorney.
14 Copies should be sent to all counsel, and to Veritext at
15 cs-southeast@veritext.com.

16 Return completed errata within 30 days from
17 receipt of testimony.

18 If the witness fails to do so within the time
19 allotted, the transcript may be used as if signed.

20
21
22 Yours,

23 Veritext Legal Solutions
24
25

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Christopher D. Roche (#6801963)

E R R A T A S H E E T

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Christopher D. Roche

Date

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Christopher D. Roche (#6801963)

ACKNOWLEDGEMENT OF DEPONENT

I, Christopher D. Roche, do hereby declare that I have read the foregoing transcript, I have made any corrections, additions, or changes I deemed necessary as noted above to be appended hereto, and that the same is a true, correct and complete transcript of the testimony given by me.

Christopher D. Roche

Date

*If notary is required

SUBSCRIBED AND SWORN TO BEFORE ME THIS

_____ DAY OF _____, 20____.

NOTARY PUBLIC

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Federal Rules of Civil Procedure

Rule 30

(e) Review By the Witness; Changes.

(1) Review; Statement of Changes. On request by the deponent or a party before the deposition is completed, the deponent must be allowed 30 days after being notified by the officer that the transcript or recording is available in which:

(A) to review the transcript or recording; and

(B) if there are changes in form or substance, to sign a statement listing the changes and the reasons for making them.

(2) Changes Indicated in the Officer's Certificate. The officer must note in the certificate prescribed by Rule 30(f)(1) whether a review was requested and, if so, must attach any changes the deponent makes during the 30-day period.

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VERITEXT LEGAL SOLUTIONS

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Veritext Legal Solutions represents that the foregoing transcript is a true, correct and complete transcript of the colloquies, questions and answers as submitted by the court reporter. Veritext Legal Solutions further represents that the attached exhibits, if any, are true, correct and complete documents as submitted by the court reporter and/or attorneys in relation to this deposition and that the documents were processed in accordance with our litigation support and production standards.

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